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FRESNEL LENS SETTINGS

1. PURPOSE: To define procedures for U-2 carrier operations utilizing the Mark 6 Fresnel Lens Optical Landing System. This system will provide the pilot with a visual indication of his relative position with respect to a prescribed glide slope.

2. DEFINITIONS:

a. Lens Distance from Center. Distance from center line of landing area to center line of the Fresnel Lens.

b. Lens Factor A. Represents the number of feet the glide slope will be raised or lowered vertically for a corresponding increase or decrease of one unit of roll angle.

c. Lens Factor B. Represents the "ramp to eye" value for a particular basic angle with the lens set at 7.5 units (no roll angle tilt).

d. Roll Angle. Input to the lens unit to raise or lower prescribed glide slope to accommodate the aircraft (U-2) "hook to eye" value.

e. Hook Touch Down Point. The distance forward of the ramp that the hook will hit the deck if the pilot were to fly the "meatball" to touch down.

3. PROCEDURES:

a. Technical information for setting the Mark 6 Fresnel Lens basic angle is as follows:

(1) Set controls to Line Mode, Stabilization Zero Lock, Roll Angle 7.5 and Basic Angle 3 degrees.

(2) Monitor A500 Pitch Deck Edge Response Indicators and adjust Strip Pitch Potentiometer A534R2, for pitch angle of 2 3/4 degrees.

(3) Mask the Basic Angle Dials on the Remote Control Panels; then make new marking for 2 3/4 degrees, 3 degrees, 3 1/2 degrees and 4 degrees for read outs from Pitch Deck Edge Response Indicators.

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(4) Verify Basic Angle settings with Deck Edge Pole Checks:

At 79 ft mark, 2 3/4 deg 42.1 inches

3 deg 45.7 inches

3 1/2 deg 54.5 inches

At 69 ft mark, 4 deg 54.5 inches

Tolerances on Pole Checks plus or minus one inch.

(5) With above modification, Fresnel Lens is operational in Line Mode, Gyro Normal. Point mode stabilization is not valid.

(6) To restore normal configuration readjust Strip Pitch Potentiometer and remove mask from Basic Angle Dials.

b. Roll Angle Settings and Hook Touch Down Points are included in the chart in Attachment 2. The "hook to eye" value for the U-2 aircraft is 10 feet and the information in the chart is based upon a 10 foot "hook to ramp" clearance.

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